# Public support for the economic governance of the euro zone: empirical evidence from the debt crisis

Kristel Jacquier

UNIVERSITÉ PARIS 1
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# PUBLIC SUPPORT FOR THE ECONOMIC GOVERNANCE OF THE EURO ZONE: EMPIRICAL EVIDENCE FROM THE DEBT CRISIS

Kristel JACQUIER[1]
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**ABSTRACT:**

Using a unique database combining Eurobarometer surveys from 2004 to 2014 trust is used as a proxy for the value people give to the EU response to the crisis. The focus is on the euro zone and the sovereign debt crisis which started in November 2009. Our empirical analysis supports the theory that citizens blame the EU for the poor macroeconomic performances in the euro area. We rely on a bivariate probit model to document the relationship between national government trust and EU trust. We find that domestic macroeconomic conditions influence both level of government. However, a deeper analysis suggests that the proximity with the average Euro zone economic performances increases trust in the European Union.

**JEL classification:** F55, C25, F34

**Keywords:** European integration, survey research, debt crisis

[1] Paris School of Economics, University of Paris I (Panthéon Sorbonne), Paris, France. email: kristel.jacquier@univ-paris1.fr

## INTRODUCTION

Trust in the European Union has significantly declined during the Great Recession. This leads one to believe that citizens consider the European Union as a relevant level of governance when crisis occurs. As previously mentioned in the literature (Hobolt & Tilley, 2014), since citizens do not identify a 'European government', when they blame the EU for poor performance, they might lose trust in the EU as a whole. Therefore, trust is used as a proxy for the value people give to the EU response to the crisis. The focus is on the euro zone and the sovereign debt crisis which started in November 2009. Trust has been declining during the great recession but in the euro zone, trust in the EU started to drop in 2010 while trust in the government had already began falling one year before. In the following paper we shall use the hypothesis that trust in the EU was influenced by the economic governance during the crisis. Indeed European institutions and a "European government" were on the spotlight and for the first time made decisions with critical consequences in domestic policies.

The empirical evidence provided in the paper suggests that citizens blame European institutions for the poor macroeconomic performances in the area. Unemployment has a strong and robust negative influence on trust in the EU while long term interest rates are more volatile. As a second step we intend to prove that a considerable proportion of EU citizens are now able to make an informed opinion on EU politics and EU trust is not a proxy for evaluations of national politics and policy. Bivariate probit estimates show that macroeconomic conditions might have a different impact on trust in the European Union compared to trust in national governments. Predictive margins derived from the bivariate probit model suggest that citizens living in countries with economic performances close to the Euro zone average are more likely to trust the European Union.

## LITERATURE

We build on a large body of work that has studied public support for the EU. At the micro level, EU support has been constantly related to favorable position in the labour market and more generally in the society. Studies focusing on people's position in the labour market to explain support for the EU find a strong and robust effect (Gabel and Whitten, 1997; Gabel, 1998) which is consistent with the hypothesis that gains and losses from the EU are unevenly distributed. Inglehart & Rabier (1978) are the first authors who introduced macroeconomic variables as determinants of public support for European integration. They showed that growth and inflation matter but long-term influences such as the length of membership or the cognitive mobilization are stronger predictors of attitudes towards

the EU. The link between citizens' support towards the EU and economic conditions has been further developed in the 1990's. Anderson and Kaltenthaler (1996) confirm the impact of growth and inflation but unemployment had the strongest impact on the period considered (1973-93). Eichenberg and Dalton (1993) find a significant impact of inflation and intra-EC trade. Anderson and Reichert (1995) evaluate direct (EU budget) and indirect (from trade) benefits at the country and individual levels. They find EU budget is the strongest determinant of EU support for the 12 countries included in the study. During that period scholars agreed that macroeconomic conditions had an influence although its significance and magnitude would markedly vary depending on the sample and the time-period considered. Since the early 1990s and especially after the ratification of the Maastricht treaty, the literature has shown that macroeconomic conditions have become less significant (Eichenberg and Dalton, 2007). In fact, it is argued that once the benefits of greater intra-European trade flows and more stable prices are regarded as acquired, European citizens have started considering the redistributive implications of the convergence criteria on national policies, particularly on the different national welfare state models.

In the context of the current sovereign debt crisis, several scholars advance the hypothesis that macroeconomic variables could regain influence on citizens' evaluation. Not only has the EU acquired more competencies over years and citizens may hold it accountable for economic outcomes (Hobolt & Tilley 2014) but the context of the crisis gives an opportunity for citizens to evaluate the European governance based on decisions with a domestic impact. Kuhn and Stoeckel (2014) support the idea that citizens consider the EU as a relevant actor to tackle the sovereign debt crisis. The European Union is no longer evaluated through the benefits of membership but rather on the implications of the economic governance. During the crisis, institutions in the Euro area (mainly the European Council) have had to take measures that might disadvantage the typical 'winners of European integration' in certain countries (Kuhn & Stoeckel, 2014). Gomez (2014) uses the Eurobarometer database from September 2007 to May 2011 and brings evidence that European citizens blame the EU for the bad economic situation in their home country. They find robust results for unemployment and interest rates suggesting that there might be a feeling that the EU has failed to solve the sovereign debt crisis. Gomez (2014) further analyses the preferences of younger Europeans (aged 30 or less in the study) and finds that the effects of economic growth and interest rates are significantly stronger for this segment of the population. Roth et al. (2014) seek to measure the impact unemployment on trust in the European Central Bank. They use fixed effects Feasible Generalized Least Square (FGLS) on panel date over the period 1999-2012. To do so, they calculate "net trust" by subtracting the percentage of those who trust from those who do not trust. They separate pre-crisis from post-crisis periods and also differentiate between core (Austria, Belgium, Finland, France, Germany, Italy, Luxembourg and the Netherlands) and peripheral countries (Greece, Ireland, Portugal and Spain). They find a robust

negative relationship between unemployment and trust in the European Central Bank in times of crisis especially in periphery countries. Serricchio et al. (2013) study the effect of growth, inflation and unemployment on Euroscepticism using a logistic regression model. They compare data from 2007 and 2010 in order to capture the impact of the current financial crisis. They find a negative impact of GDP growth in 2007 that becomes insignificant in 2010. Inflation and unemployment have no impact in their model. Armingeon and Ceka (2014) use 5 waves of Eurobarometer surveys over the period 2007-2011. They estimate a multilevel logistic regression including 27 EU countries. Their analysis is framed in David Easton theory of institutional support. Affective (diffuse) support and utilitarian (specific) support determine the overall preferences of citizens towards institutions. Diffuse support is based on ideology and cultural attachment. Diffuse support is by definition less volatile than specific support that might fluctuate with potential gains and losses that a voter perceives from a given policy outcome. Armingeon and Ceka (2014) hypothesize that the great recession has affected both diffuse and specific support for the European Union. To explain both forms of support they draw on cue theory (Hooghe and Marks, 2005). Cue theory states that cognitive short-cuts, contextual factors and elite cues help citizens form opinions about issues they have little knowledge about. Armingeon and Ceka (2014) argue that citizens tend to use national context to evaluate the EU and it should be even more the case during the great recession because when discontent is high it extends to any level of government. On the other hand if economic and social conditions are good there are no reason to distrust any government. Trust in national government and trust in the EU are correlated by 0.67 in their sample[2] and the regression analysis enhances that trust in the government is the strongest determinant of EU trust. None of the macro-economic indicators included in the analysis are significant suggesting that they do not affect trust in the period studied. Armingeon and Ceka (2014) elaborate on a causal relationship between trust in national governments and trust in the EU showing that national elections and domestic economic conditions affect trust in the European Union.

Anderson (1998) is one of the first papers dealing with the interplay between national and European politics. The empirical study in the paper tends to prove that trust in the EU is a proxy for trust in national governments. Sanchez-Cuenca (2000) and Munoz et al (2011) also show that national institutions influence preference towards the European Union. Sanchez-Cuenca (2000) highlight that distrust in national institutions have a positive influence on support for the European Union. Citizens in countries where corruption is high are more inclined to transfer sovereignty to European institutions. Munoz et al (2011) confirm that living in a country with low trust institutions increases trust in the European Union. All these empirical contributions may as well support the idea that trust in the EU and trust in national governments are influenced by the same factors but do not necessarily influence one

[2] In our sample the correlation coefficient is r=0.457

another. It would be wishful thinking to imagine that trust in different level of institutions could be perfectly independent. In the context of European integration, where decision-making is heavily intergovernmental it is even more unlikely for citizens to compartmentalize both level of governments. The present paper provides empirical evidence describing the interplay between national and European politics, especially how macroeconomic variables influence institutional trust at the national and European level.

The literature so far has showed that macroeconomic variables are unstable predictors of EU support. Furthermore, documenting the interaction between national and European levels of governance is promising.

## THE DATA

We use a unique database combining Eurobarometer surveys from 2004 to 2014 and macroeconomic variables[3]. The micro variables are demographic controls for age and gender as well as indicators for occupation and education level. As for macro variable we consider 2 adverse macroeconomic shocks: Unemployment and long-term interest rates. The macro variables are standardized (variable with mean 0 and standard deviation 1).

The analysis covers a 10-year period and includes notably returning confidence after 2012. The EU is not binding in terms of macroeconomic policies, while the single currency is. In order to assess the role of market pressure as well as growth and employment perspectives we limited the sample to the 15 EU member states that had adopted the Euro when the crisis occurred: Austria, Germany, Belgium, Spain, Finland, France, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Greece, Slovenia, Cyprus and Malta[4].

Most empirical analyses use the membership question from the Eurobarometer to evaluate public support for the European Union (Gabel, 2009; Kuhn et al, 2014). The question is as follows:

> "Generally speaking, do you think that (your country's) membership in the European Community (Common Market) is a bad thing (1), neither good nor bad (2), or a good thing (3)?"

[3] A detailed description is provided in the appendix

[4] 11 countries participated in the official launch of the euro on 1 January 1999 (Austria, Germany, Belgium, Spain, Finland, France, Ireland, Italy, Luxembourg, the Netherlands and Portugal); Greece adopted the single currency in 2001, Slovenia in 2007, Cyprus and Malta in 2008.

This question offers a subjective evaluation of the overall benefits of the European Union which is an essential dimension of support for the EU, and it is of course highly correlated to institutional trust. Nevertheless, by using the "trust" question we aim to target another dimension of support for the EU: the evaluation of the governance of the euro zone. Although it is clear that all the dimensions are jumbled together when individuals respond to surveys, the governance of the euro zone is likely to have affected institutional trust the most.

Our dependent variable is "Trust in the European Union". Citizens were asked the following question:

> "I would like to ask you a question about how much trust you have in certain institutions. For each of the following institutions, please tell me if you tend to trust it or tend not to trust it".

Respondents are presented with several institutions, one of which being the European Union. Along with "tend to trust" and "tend not to trust", respondents can also use a third category of answer "don't know". As can be seen in the appendix, the amount of don't know answers are negligible, they are thus treated as missing values when logistic regressions are computed.

## EMPIRICAL STRATEGY

The empirical analysis seeks to explain trust in the European Union. The dependent variable encompasses two choices: tend to trust and tend not to trust. Thus a logistic regression is estimated. It can be expressed as:

$$P_i = Prob\ (Y_{1i} = 1\ |X_i) = F(X_i\delta) \qquad \forall \mathrm{i} = 1, .., \mathrm{N}$$

With $F(z) = e^z/(1 + e^z)$, the cumulative logistic distribution function. The parameter vector$\delta$, is estimated by maximum likelihood.

Logistic models are latent variable models, ${Y^*}_{1_{ij}}$, the latent variable is defined as follow:

$$Y_{1_i} = \begin{cases} 1\ if\ {Y^*}_{1_{ij}} > 0 \\ 0\ otherwise \end{cases}$$

The baseline model includes the main socioeconomic characteristics and the essential controls:

$${Y^*}_{1_{ij}} = \delta_0 + \delta_1 D_i + \delta_2 O_i + \delta_3 S_i + \delta_4 C_j + \varepsilon_{1i}$$

Where *i* characterizes individuals and *j* represents countries. D is a vector of individual socio-demographic characteristics (age and gender). O represents the occupation of individuals. S is a continuous variable capturing a trend in surveys over time. C stands for country dummies which accounts for any omitted country-specific influence and $\varepsilon_{1i}$ is the error term. Country dummies control for omitted variables and measurements errors. Therefore within country variation is exploited.

Secondly macroeconomic variables are included one by one and altogether:

$$Y_{2_{ij}} = \gamma_0 + \gamma_1 D_i + \gamma_2 O_i + \gamma_3 S_i + \gamma_4 C_j + \gamma_5 M_j + \varepsilon_{2i}$$

Following Armingeon and Ceka (2014) we want to see if being under IMF conditionality affected EU trust. A dummy variable for the intervention of the "Troika"[5] is included. It takes the value 1 for Greece in 2010, for Ireland and Portugal in 2011 and for Cyprus in 2012.

In the next step three sub-samples are created in order to disentangle the consequences of the crisis. We identify the announcement by Papandreou's government in early November 2009 as the start of the public debt crisis in Europe[6]. Consequently, the pre-crisis sample includes surveys from 2004 to 2009, the post crisis from 2010 to 2014, and the peak of the crisis pool surveys from 2010 to 2012.

In the second part of the analysis trust in the European Union and trust in national governments are jointly considered. We make the assumption that there are unobserved variables that influence people to both trust (or distrust) the EU and their government. Both opinions are determined by the same variables so that the error terms of the equations below are correlated. Like the seemingly unrelated regression model, bivariate probit models assume that the i.i.d. errors are correlated.

$$\begin{cases} Y_{2_{ij}} = \alpha_0 + \alpha_1 D_i + \alpha_2 O_i + \alpha_3 S_i + \alpha_4 C_j + \alpha_5 M_j + \varepsilon'_{2i} \\ Y_{3_{ij}} = \beta_0 + \beta_1 D_i + \beta_2 O_i + \beta_3 S_i + \beta_4 C_j + \beta_5 M_j + \varepsilon_{3i} \end{cases}$$

$\alpha$ and $\beta$ are vectors of unknown parameters. The subscript $i$ denotes an individual observation. $\varepsilon'_{2i}$ and $\varepsilon_{3i}$ are the error terms. They are assumed to be normally distributed $(\mathrm{N}(\mu, \sigma^2) = \mathrm{N}(0,1))$.

[5] The alliance between the European Central Bank, the European Commission and the International Monetary Fund to monitor the bailout plans in the Euro zone during the debt crisis

[6] previous data on government debt levels and deficits had been misreported : in November 2009 Greece runs a year deficit of 12.7% of GDP, and a public debt of $410 billion

We write $Cov\ (\varepsilon'_{2i}, \varepsilon_{3i} \mid X_{2i}) = \rho$

If $\rho = 0$, the error terms are uncorrelated and both equations can be estimated separately.

If $\rho \neq 0$, separated estimates would be biased.

See the appendix for details on likelihood functions.

In order to document the interplay between trust and macroeconomic variables we use predictive margins. Predictive margins are conditional expectations of responses. They display the averages of predictions over the estimation sample for fixed values of one covariate.

In figures 10 to 15 the focus is on 4 combinations of responses:

- Trust in the EU=0 Trust in national government=0
- Trust in the EU=1 Trust in national government=1
- Trust in the EU=0 Trust in national government=1
- Trust in the EU=1 Trust in national government=0

We estimate the probability of one of these combinations to occur, for a given level of unemployment rate (fixed values) and integrating over the remaining covariate (average marginal effect).

## DESCRIPTIVE STATISTICS

### Adverse shocks

Figure 1: Unemployment from 2004 to 2014

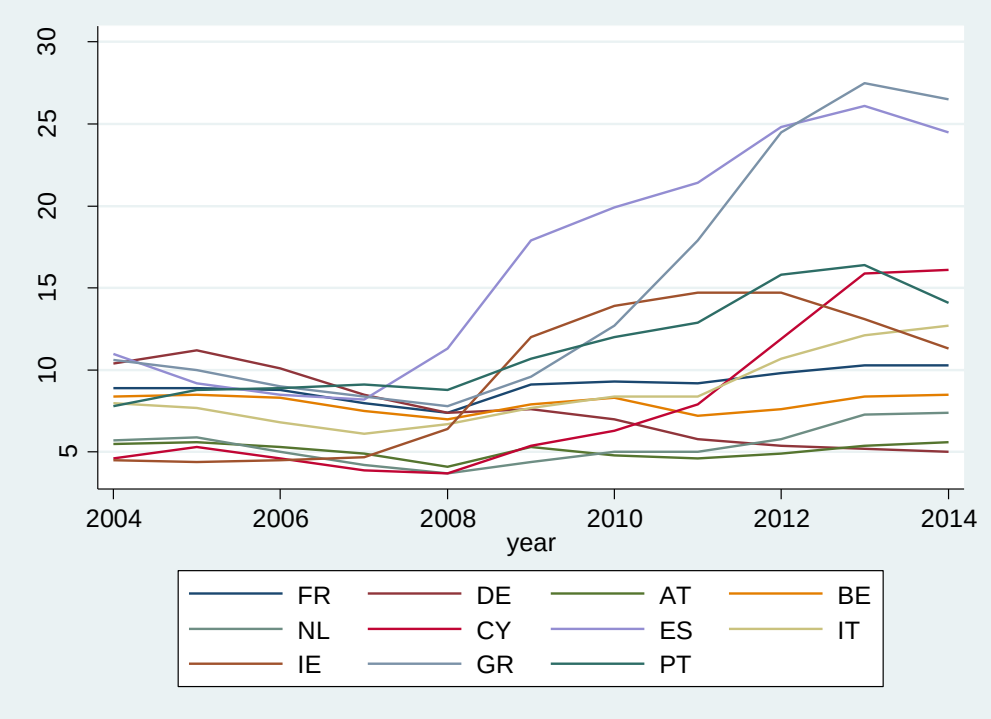



Figure 1 shows a surge in unemployment and a diverging trend between member states. Such raise in unemployment on one side, and the involvement of the European Union in the crisis on the other side is likely to create mixed opinions among European citizens.

Figure 2: Long term interest rates in Central Europe

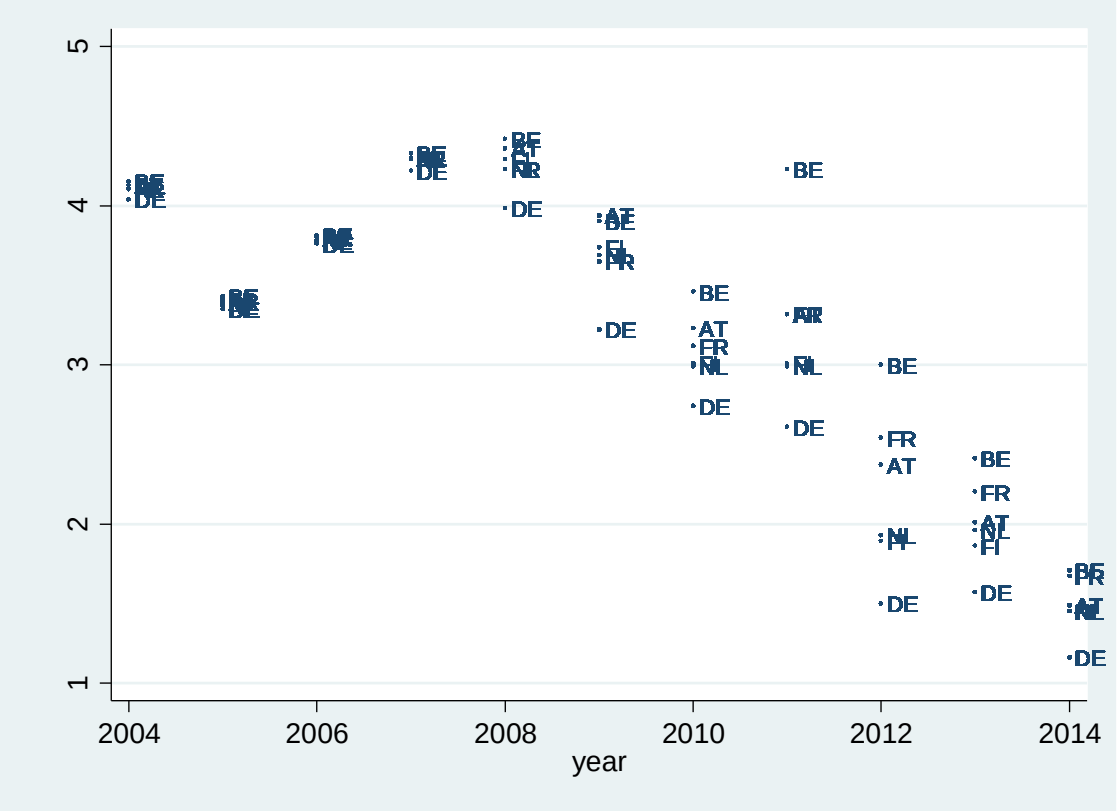



Figure 3: Long term interest rates in periphery Europe

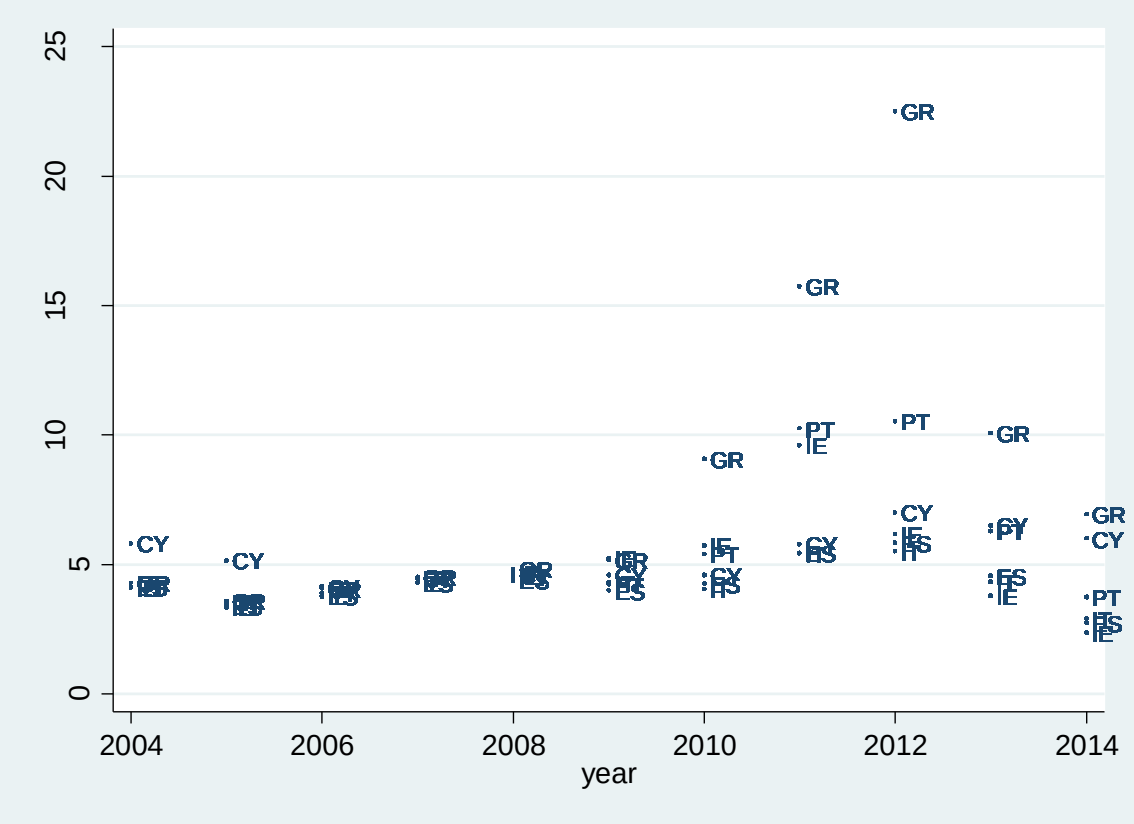
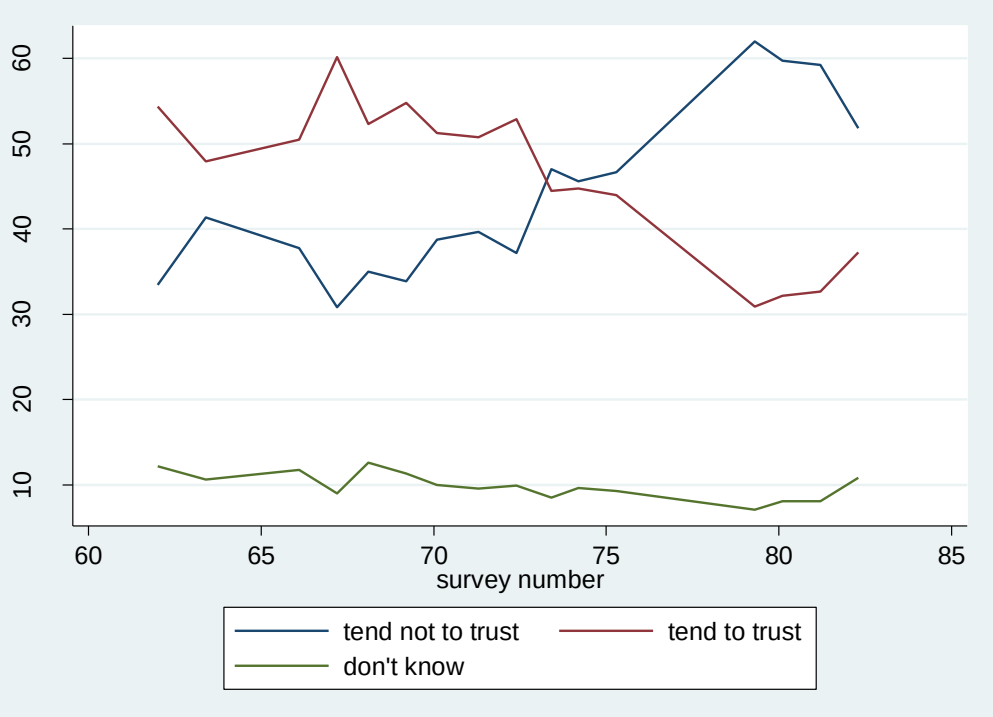


Figure 2 illustrates the evolution of long-term interest rates for central Europe. One can see a downward trend and more dispersion at the end of the period. Peripheral countries (figure 3) conversely, display an upward trend with an even greater dispersion in 2014.

The consequences of the crisis are well-known: low growth or recession, rising unemployment, growing deficits and public debts. Figures 1 to 3 highlight its asymmetric economic consequences among the member states. The diverging trend clearly appears from 2010 onwards between the center and the periphery of the European Union, but also within the sub-groups.

**Trust**

Figure 4: trust in the European Union from 2004 to 2014[7]

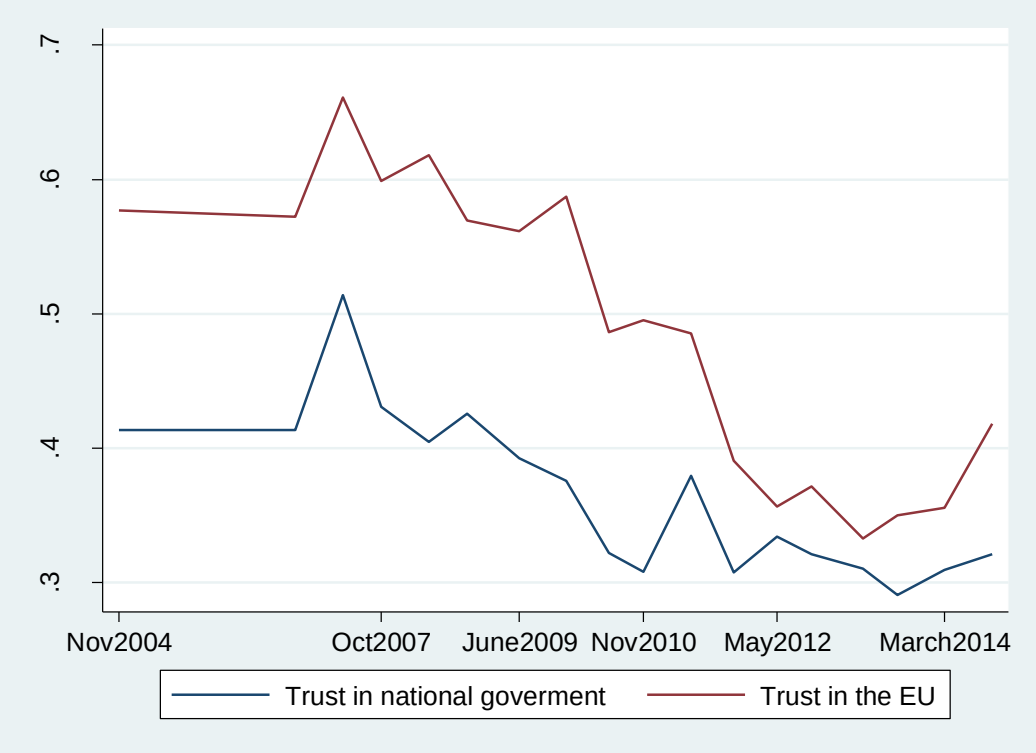



The loss of trust does not seem to reflect the immediate impact of the crisis. The peak of the crisis is around October-November 2008, corresponding to the 70.1 EB survey. However the confidence level in this survey remains high. The share of citizens who tend not to trust the EU starts to increase in May 2010 which corresponds to the onset of the Greek government-debt crisis. Indeed, the announcement

[7] We present ratios for each categories

was made in early November 2009, the data collection of EB 72.4 took place in October 2009, so the first survey included in our dataset that take into account the debt crisis is EB 73.4 in May 2010. The curves of trust and distrust reversed in late 2010. For the first time since the start of the EMU, more citizens distrust the European Union than trust it. Trust starts to roll upward in 2013 with a clear increase in 2014. The evolution of the curves suggests that they might reverse again in the next few years. Additionally, figure 4 shows that indifference towards the EU tends to decline in the euro zone.

Figure 5: Trust in the EU and trust in national governments




In figure 5, trust in the government is compared to trust in the EU over the period 2004-2014. Both institutions have suffered from the crisis. Strikingly, before 2008 the curves seem symmetric with a clearly higher level of trust in the European Union. From 2008 the curves show different tendencies. Trust in national governments started to decrease in 2009 while trust in the EU remains constant at that time (which is apparent in figure 4 also). Trust in the EU drops constantly from 2010 to 2012 while the path of government trust is more erratic. Overall trust in the EU has reduced a lot more, as a result in 2014 trust in the two institutions end up at comparable levels in 2013. In what we can call the post-crisis period, trust in the EU seems to recover better. Descriptive statistics in the appendix reveal that 27% of the sample has responded differently for trust in the EU and trust in national government. We hypothesize that many citizens are now able to make an informed opinion on EU politics.

**The impact of macro variables on trust**

Figure 6: Correlation between mean trust in the EU and unemployment by countries in 2004

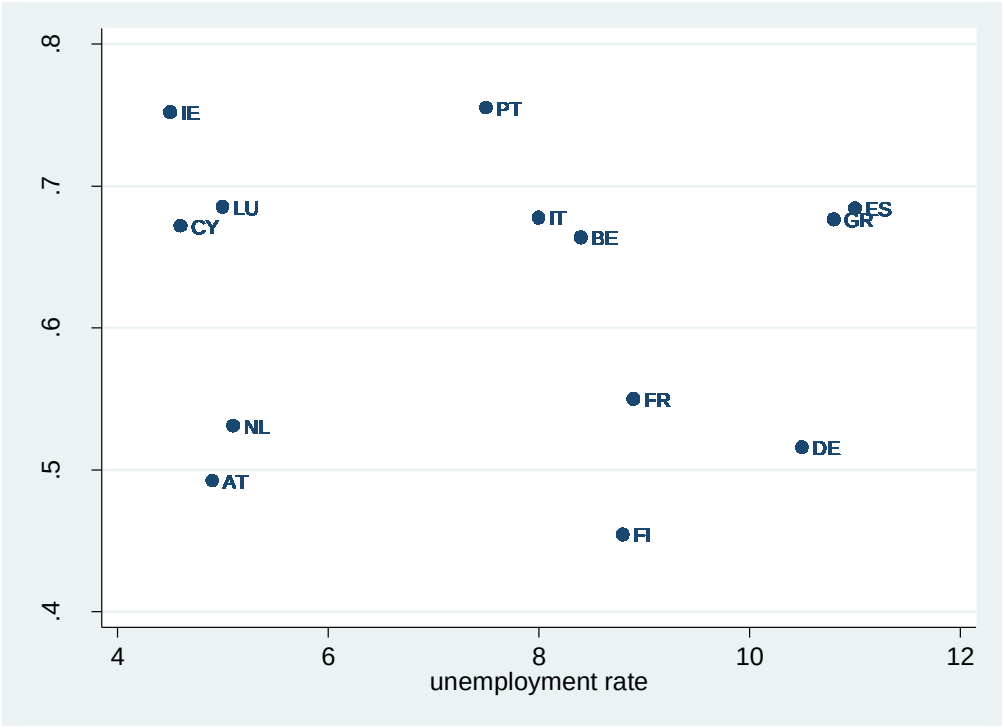



Figure 7: Correlation between mean trust in the EU and unemployment by countries in 2014

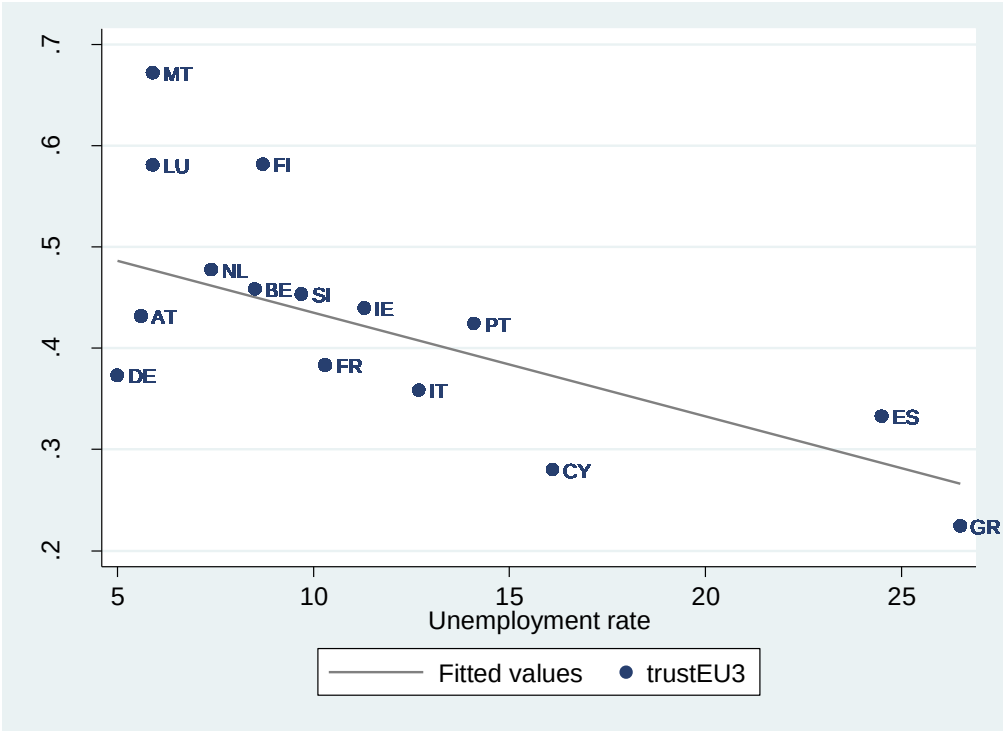


Figure 8: Correlation between mean trust in the EU and interest rates by countries in 2004

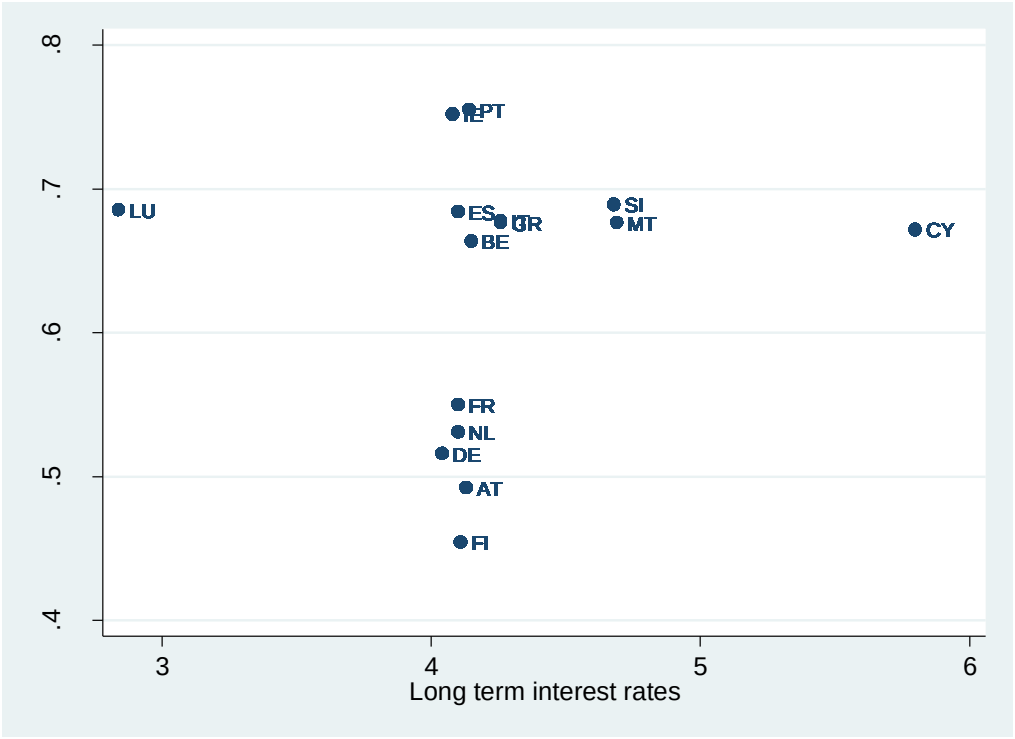



Figure 9: Correlation between mean trust in the EU and interest rates by countries in 2014

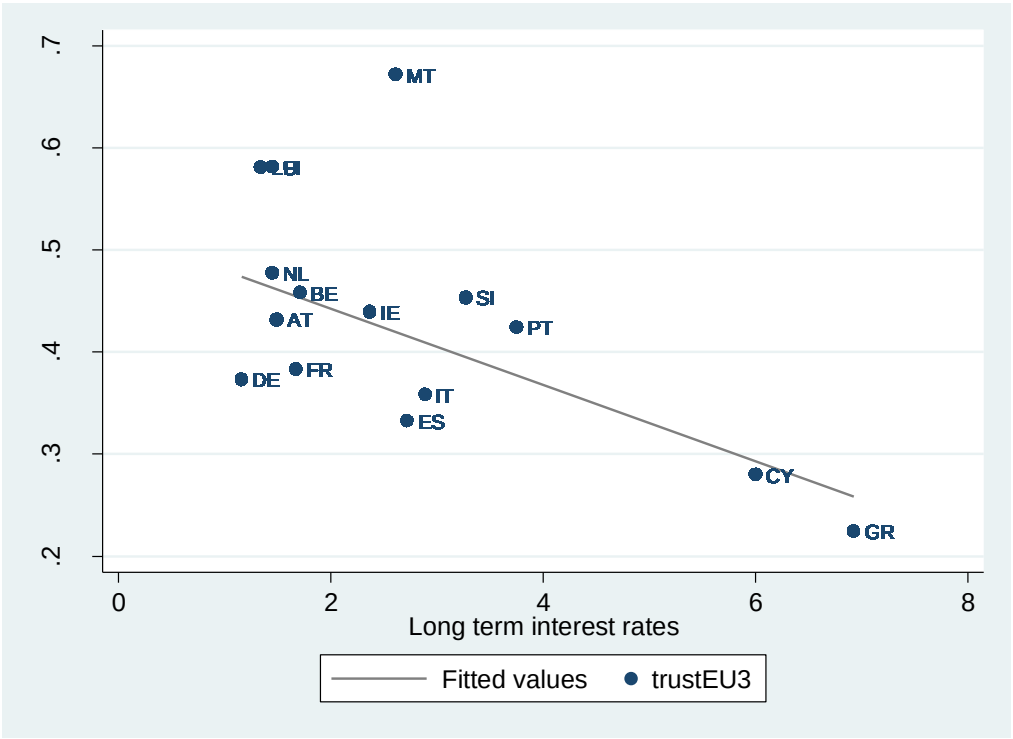


Figure 6 and 7 give an idea of the relationship that might exist between trust and unemployment. In 2004 (figure 6) the relationship seems inexistent. In 2014 however (figure 7), a trend has appeared, although it is mainly driven by outermost countries. We observe the same phenomenon for interest rates (figure 8 and 9). Overall, figure 6 to 9 suggest that macroeconomic variables are correlated to trust in the European Union after the debt crisis.

## RESULTS

The tables display odd ratios to facilitate the interpretation. Odd ratios are exponentiated coefficient. Let $b$ be the unexponentiated coefficient, $s$ its standard error, and $b_0$ and $b_1$ the reported confidence interval for $b$. In exponentiated form, the point estimate is $e^b$, the standard error $e^b$s, and the confidence interval $e^{b0}$ and $e^{b1}$. P-values are the same as those for $b$, as are Z and t statistics.
We use standardized values of unemployment rates and long term interest rates to ease the interpretation of the results. Variables have been rescaled to have a mean of zero and a standard deviation of one[8]. Each case's value on the standardized variable indicates its difference from the mean of the original variable in number of standard deviations (of the original variable). For example, 2 indicates that a case has a value two standard deviations higher than the mean.

The baseline model is presented in Model 1 and replicates the previous findings in the literature (see Gomez, 2014). Managers and students are the most pro-EU social classes while manual workers an unemployed people trust European integration the least. As compared to white collars, unemployed people trust the European Union 43% less. In model 2 the dummy "Troika" is highly significant and reports that those direct interventions in domestic politics decrease trust by 20%. Model 3 and 4 add macro variables one by one. The unemployment rate has the strongest impact (trust decreases by 35% as unemployment increases by one standard deviation) and one standard deviation increase in interest rates reduce trust by 18%. Model 5 includes the macro variables altogether. Their significance remains high but the impact of long term interest rates on trust is weaker (a reduction of only 4%). The pseudo R-squared is 0,056 for both models 3 and 5 which imply that long term interest rates do not improve the explanatory power of the model.

[8] the mean (of the original variable) is subtracted from the value for each case, and the difference between the individual's score and the mean is divided by the standard deviation (of the original variable). By definition (because the sample includes only Euro zone countries), the mean of the unemployment rate variable is the average Euro zone unemployment rate over the 10 years considered.

| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
|---|---|---|---|---|---|
| *ref cat: male* | | | | | |
| female | 0.943*** | 0.943*** | 0.940*** | 0.941*** | 0.940*** |
| | (-6.66) | (-6.68) | (-6.97) | (-6.84) | (-6.99) |
| | | | | | |
| *ref cat: 25-39* | | | | | |
| 15-24 | 1.199*** | 1.200*** | 1.197*** | 1.202*** | 1.197*** |
| | (9.19) | (9.20) | (9.01) | (9.27) | (9.03) |
| | | | | | |
| 40-54 | 0.881*** | 0.880*** | 0.884*** | 0.882*** | 0.884*** |
| | (-10.62) | (-10.68) | (-10.28) | (-10.53) | (-10.28) |
| | | | | | |
| Above 55 | 0.969* | 0.967* | 0.955** | 0.961** | 0.955** |
| | (-2.23) | (-2.33) | (-3.17) | (-2.75) | (-3.21) |
| | | | | | |
| *ref cat: Other white collar* | | | | | |
| Self-employed | 1.036 | 1.037 | 1.044* | 1.038 | 1.044* |
| | (1.83) | (1.86) | (2.17) | (1.88) | (2.16) |
| | | | | | |
| Manager | 1.351*** | 1.350*** | 1.355*** | 1.345*** | 1.354*** |
| | (16.10) | (16.05) | (16.19) | (15.83) | (16.14) |
| | | | | | |
| Manual worker | 0.775*** | 0.774*** | 0.774*** | 0.773*** | 0.774*** |
| | (-16.05) | (-16.09) | (-15.98) | (-16.15) | (-16.00) |
| | | | | | |
| House person | 0.811*** | 0.811*** | 0.804*** | 0.808*** | 0.804*** |
| | (-10.68) | (-10.66) | (-11.00) | (-10.82) | (-11.01) |
| | | | | | |
| Unemployed | 0.577*** | 0.577*** | 0.619*** | 0.586*** | 0.618*** |
| | (-27.41) | (-27.39) | (-23.64) | (-26.50) | (-23.68) |
| | | | | | |
| Retired | 0.869*** | 0.869*** | 0.880*** | 0.872*** | 0.880*** |
| | (-7.68) | (-7.67) | (-6.94) | (-7.50) | (-6.95) |
| | | | | | |
| Student | 1.376*** | 1.375*** | 1.395*** | 1.370*** | 1.392*** |
| | (12.72) | (12.67) | (13.14) | (12.49) | (13.07) |
| | | | | | |
| survey | 0.994*** | 0.994*** | 0.996*** | 0.994*** | 0.996*** |
| | (-85.75) | (-84.99) | (-47.78) | (-86.96) | (-46.95) |
| | | | | | |
| Troika | | 0.798*** | | | |
| | | (-8.25) | | | |
| | | | | | |
| Unemployment rate | | | 0.649*** | | 0.665*** |
| | | | (-56.48) | | (-45.83) |
| | | | | | |
| Long term interest rates | | | | 0.823*** | 0.966*** |
| | | | | (-32.96) | (-5.23) |
| | | | | | |
| Country fixed effects | | | | | |
| Observations | 243456 | 243456 | 243456 | 243456 | 243456 |
| pseudo R-sq | 0.046 | 0.046 | 0.056 | 0.049 | 0.056 |
| Log likelihood | -161036.3 | -161002.0 | -159349.7 | -160443.0 | -159335.9 |
| chi2 | 15354.3 | 15423.0 | 18727.5 | 16541.0 | 18755.1 |
| Exponentiated coefficients; t statistics in parentheses | | | | | |
| * p<0.05, ** p<0.01, *** p<0.001 | | | | | |

Model 6 to 11 run estimates on three sub-samples: The pre-crisis (2004-2009), the post crisis (2010-2014) and the peak of the crisis (2010-2012). The most striking result is that macroeconomic variables explain public trust the best after the crisis (R2 goes from 0.038 to 0.042). Unemployment has a greater impact on trust during the peak of the crisis but the impact remains strong and highly significant in each of the subsample. The role played by long term interest rates is more ambiguous. Before the crisis long term interest rates had a positive impact on trust in the EU. The impact remains positive at the heart of the crisis and reversed in the post crisis period. One line of explanation would be that before the crisis, high interest rates countries are those who benefited from the adoption of the single currency the most (notably through access to credit). During the crisis, they have requested solidarity from other member states through bailouts of great amount. However from 2010 there is a strong diverging trend in long term interest rates (as shown in figure 2 and 3) which has exacerbated the lack of solidarity between member states within the euro zone and might have reduced trust in the EU from citizens in countries with high interest rates.

| | Pre crisis | | Post crisis | | 2010-2012 | |
|---|---|---|---|---|---|---|
| | Model 6 | Model 7 | Model 8 | Model 9 | Model 10 | Model 11 |
| *ref cat: male* | | | | | | |
| female | 0.952*** | 0.951*** | 0.930*** | 0.929*** | 0.921*** | 0.921*** |
| | (-3.74) | (-3.81) | (-6.00) | (-6.09) | (-5.27) | (-5.28) |
| | | | | | | |
| *ref cat: 25-39* | | | | | | |
| 15-24 | 1.169*** | 1.166*** | 1.211*** | 1.216*** | 1.185*** | 1.186*** |
| | (5.41) | (5.32) | (6.91) | (7.04) | (4.87) | (4.89) |
| | | | | | | |
| 40-54 | 0.875*** | 0.874*** | 0.886*** | 0.889*** | 0.920*** | 0.923*** |
| | (-7.66) | (-7.77) | (-7.21) | (-6.99) | (-3.91) | (-3.76) |
| | | | | | | |
| Above 55 | 0.969 | 0.964 | 0.942** | 0.943** | 0.973 | 0.973 |
| | (-1.50) | (-1.72) | (-3.02) | (-2.95) | (-1.09) | (-1.06) |
| | | | | | | |
| *ref cat: Other white collar* | | | | | | |
| Self-employed | 1.018 | 1.020 | 1.067* | 1.063* | 1.045 | 1.044 |
| | (0.60) | (0.67) | (2.40) | (2.27) | (1.28) | (1.25) |
| | | | | | | |
| Manager | 1.321*** | 1.326*** | 1.388*** | 1.388*** | 1.370*** | 1.373*** |
| | (10.13) | (10.25) | (12.72) | (12.70) | (9.48) | (9.56) |
| | | | | | | |
| Manual worker | 0.776*** | 0.776*** | 0.762*** | 0.764*** | 0.760*** | 0.762*** |
| | (-10.98) | (-10.97) | (-12.17) | (-12.02) | (-9.70) | (-9.59) |
| | | | | | | |
| House person | 0.829*** | 0.829*** | 0.772*** | 0.776*** | 0.775*** | 0.776*** |
| | (-6.75) | (-6.75) | (-9.02) | (-8.83) | (-7.06) | (-7.01) |
| | | | | | | |
| Unemployed | 0.601*** | 0.614*** | 0.608*** | 0.619*** | 0.612*** | 0.621*** |
| | (-16.22) | (-15.50) | (-18.55) | (-17.82) | (-14.16) | (-13.74) |
| | | | | | | |
| Retired | 0.860*** | 0.864*** | 0.888*** | 0.892*** | 0.887*** | 0.892*** |
| | (-5.52) | (-5.38) | (-4.74) | (-4.56) | (-3.72) | (-3.53) |
| | | | | | | |
| Student | 1.459*** | 1.467*** | 1.353*** | 1.356*** | 1.377*** | 1.384*** |
| | (10.11) | (10.25) | (8.73) | (8.77) | (7.28) | (7.38) |
| | | | | | | |
| survey | 1.000 | 1.000 | 0.994*** | 0.996*** | 0.986*** | 0.989*** |
| | (1.19) | (-1.32) | (-30.48) | (-16.31) | (-30.39) | (-20.90) |
| | | | | | | |
| Long term interest rates | | 1.321*** | | 0.951*** | | 1.066** |
| | | (6.54) | | (-5.26) | | (3.14) |
| | | | | | | |
| Unemployment | | 0.777*** | | 0.681*** | | 0.624*** |
| | | (-12.06) | | (-21.72) | | (-10.18) |
| | | | | | | |
| Country fixed effects | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 113416 | 113416 | 130040 | 130040 | 77743 | 77743 |
| pseudo R-sq | 0.027 | 0.028 | 0.038 | 0.042 | 0.036 | 0.038 |
| Log likelihood | -74634.3 | -74540.7 | -84365.7 | -84035.1 | -51221.4 | -51129.4 |
| chi2 | 4136.3 | 4323.6 | 6694.3 | 7355.6 | 3831.5 | 4015.4 |
| Exponentiated coefficients; t statistics in parentheses | | | | | | |
| * p<0.05, ** p<0.01, *** p<0.001 | | | | | | |

The second part of the analysis relies on biprobit estimates and focus on the post-crisis period[9]. Model 12 is the baseline model, including the microeconomic determinants and country dummies. The regression indicates that the errors term are indeed correlated and estimating trust in the European Union and trust in national government jointly is relevant. Socioeconomic determinants included in the model such as age and occupation, but also some variables that could not be included, influence both opinions. Long-term interest rates are included in models 13 to 15 and bring interesting results. Except in model 14 (where Euro zone unemployment rates are included) the impact of interest rates on trust changes sign. It even becomes insignificant for trust in national governments in model 15. In the end, interest rates have robust negative impact on trust in the European Union while the impact on national government trust is volatile. Monitored interest rates are an essential requirement for member states to adopt the single currency[10]. The European Commission disapproves of high interest rates which might explain that interest rates reduce trust in the European Union in each model. Unemployment rates have a strong and robust negative impact on trust in institutions whether one considers national government or the EU, national unemployment rates and European unemployment rates. A variable measuring the gap between the unemployment level in the country the individual lives in and the mean level of unemployment in the euro area is included in model 15. The gap is positive when national unemployment is inferior to the Euro zone average; it is negative when national unemployment is superior to the Euro zone average. Not surprisingly, the gap in unemployment has a positive impact. Individuals in countries where unemployment is superior to the Euro zone average are less likely to trust both their government and the European Union.

We want to emphasize the interplay between the national and European level and the fact that a significant part of citizens now have a documented opinion on European politics. As appears from the descriptive statistics, 27% of the sample expresses different opinions on trust in the EU and trust in national government and we want to know if macroeconomic variables play a role. Interpretation of regression tables can be very challenging in nonlinear models such as probit regression. Predictive margins allow interpreting effects on outcomes such as probabilities. Predictive margins are calculated from predictions of the model 13 for unemployment, model 14 for Euro zone unemployment, and model 15 the gap between national and euro zone average unemployment rates[11].

[9] pooled estimates are available upon request

[10] Convergence criteria state that long term interest rates shall not be no more than 2.0% higher, than the unweighted arithmetic average of the similar 10-year government bond yields in the 3 EU member states with the lowest HICP inflation

[11] We stop using standardized values for macroeconomic variables.

Following Armingeon and Ceka (2014) we define four types of Europeans based on their level of institutional trust:

- The trusting citizens: trust each level of government
- The detached citizens distrust each level of government
- The escapists: trust the European Union but not their government
- The nationalists: trust only their government

The last two categories are analyzed[12]. Figures 10 to 15 illustrate the results. Figure 10 and 11 consider unemployment in the country the respondent lives in. As can be seen in figure 11, when unemployment goes up, the combination of high trust in national government and low trust in the EU is unlikely to happen. The relationship is less linear for escapists. When unemployment is around the average euro zone, citizens are the most likely to trust the European Union more than their own government. The difference is not marked and the confidence intervals are bigger than for nationalist citizens but it provides insights on the interplay between the national context and trust in both level of government. The next figures (12 to 13) involve euro zone average unemployment. When European unemployment is high, nationalist preferences are more likely to emerge. And the opposite is true, which gives the idea that what determines trust in the European Union might be the gap between national economic performances and the situation in the whole Euro area. Indeed, if one's country is falling behind, it becomes less likely that European solidarity prevails. The last two figures (14 and 15) illustrate that view. National preferences are more likely to emerge when national unemployment is inferior to the European average (figure 15). Figure 14 displays the most interesting result: citizens living in countries with a close to European average unemployment rate are the most likely to trust the EU more than their own government (i.e. to fall into the category of escapist citizens). To summarize, citizens who support the European project are more likely to emerge in countries with close European average economic performances.

[12] Predictive margins for trusting and detached citizens are available upon request

| | Model 12 | | Model 13 | |
|---|---|---|---|---|
| | Trust national | TrustEU | Trust national | TrustEU |
| *ref cat: male* | | | | |
| female | -0.053*** | -0.047*** | -0.054*** | -0.048*** |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| | | | | |
| *ref cat: 25-39* | | | | |
| 15-24 | 0.057*** | 0.113*** | 0.059*** | 0.116*** |
| | (0.002) | (0.000) | (0.001) | (0.000) |
| 40-54 | -0.009 | -0.074*** | -0.006 | -0.072*** |
| | (0.414) | (0.000) | (0.575) | (0.000) |
| Above 55 | 0.087*** | -0.034*** | 0.089*** | -0.034*** |
| | (0.000) | (0.005) | (0.000) | (0.006) |
| | | | | |
| *ref cat: Other white collar* | | | | |
| Self-employed | 0.006 | 0.040** | 0.006 | 0.038** |
| | (0.718) | (0.018) | (0.746) | (0.023) |
| Manager | 0.154*** | 0.202*** | 0.156*** | 0.203*** |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| Manual worker | -0.159*** | -0.169*** | -0.156*** | -0.167*** |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| House person | -0.075*** | -0.160*** | -0.071*** | -0.156*** |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| Unemployed | -0.333*** | -0.305*** | -0.321*** | -0.293*** |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| Retired | -0.025 | -0.075*** | -0.021 | -0.071*** |
| | (0.132) | (0.000) | (0.205) | (0.000) |
| Student | 0.063*** | 0.185*** | 0.064*** | 0.186*** |
| | (0.006) | (0.000) | (0.005) | (0.000) |
| | | | | |
| survey | -0.002*** | -0.004*** | 0.000 | -0.003*** |
| | (0.000) | (0.000) | (0.119) | (0.000) |
| | | | | |
| Long term interest rates | | | 0.005* | -0.014*** |
| | | | (0.055) | (0.000) |
| | | | | |
| National unemployment rate | | | -0.057*** | -0.047*** |
| | | | (0.000) | (0.000) |
| | | | | |
| Constant | 1.276*** | 2.929*** | 0.142 | 2.260*** |
| | (0.000) | (0.000) | (0.272) | (0.000) |
| | | | | |
| Estimated covariance of error terms | 0.862*** | | 0.858*** | |
| | (0.000) | | (0.000) | |
| | | | | |
| Country fixed effects | Yes | Yes | Yes | Yes |
| Number of observations | 127570 | 127570 | 127570 | 127570 |

* p<0.10, ** p<0.05, *** p<0.01

| | Model 14 | | Model 15 | |
|---|---|---|---|---|
| | Trust national | TrustEU | Trust national | TrustEU |
| *ref cat: male* | | | | |
| female | -0.053*** | -0.047*** | -0.054*** | -0.047*** |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| | | | | |
| *ref cat: 25-39* | | | | |
| 15-24 | 0.057*** | 0.116*** | 0.058*** | 0.114*** |
| | (0.002) | (0.000) | (0.002) | (0.000) |
| 40-54 | -0.009 | -0.076*** | -0.006 | -0.073*** |
| | (0.397) | (0.000) | (0.581) | (0.000) |
| Above 55 | 0.086*** | -0.037*** | 0.089*** | -0.034*** |
| | (0.000) | (0.003) | (0.000) | (0.006) |
| | | | | |
| *ref cat: Other white collar* | | | | |
| Self-employed | 0.006 | 0.043** | 0.005 | 0.038** |
| | (0.724) | (0.012) | (0.786) | (0.024) |
| Manager | 0.154*** | 0.202*** | 0.156*** | 0.202*** |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| Manual worker | -0.159*** | -0.167*** | -0.157*** | -0.168*** |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| House person | -0.074*** | -0.157*** | -0.072*** | -0.157*** |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| Unemployed | -0.331*** | -0.301*** | -0.322*** | -0.295*** |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| Retired | -0.024 | -0.074*** | -0.020 | -0.071*** |
| | (0.142) | (0.000) | (0.216) | (0.000) |
| Student | 0.062*** | 0.184*** | 0.065*** | 0.185*** |
| | (0.006) | (0.000) | (0.005) | (0.000) |
| | | | | |
| survey | -0.001*** | 0.001*** | -0.002*** | -0.004*** |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| | | | | |
| Long term interest rates | -0.013*** | -0.021*** | 0.004 | -0.018*** |
| | (0.000) | (0.000) | (0.156) | (0.000) |
| | | | | |
| Euro zone unemployment rate | -0.021** | -0.170*** | | |
| | (0.013) | (0.000) | | |
| | | | | |
| Distance from Eurozone mean unemployment | | | 0.058*** | 0.036*** |
| | | | (0.000) | (0.000) |
| | | | | |
| Constant | 1.239*** | 0.872*** | 1.025*** | 3.102*** |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| | | | | |
| Estimated covariance of error terms | 0.864*** | | 0.860*** | |
| | (0.000) | | (0.000) | |
| | | | | |
| Country fixed effects | Yes | Yes | Yes | Yes |
| Number of observations | 127570 | 127570 | 127570 | 127570 |

* p<0.10, ** p<0.05, *** p<0.01

Figure 10. Predictive margins: unemployment (escapist)

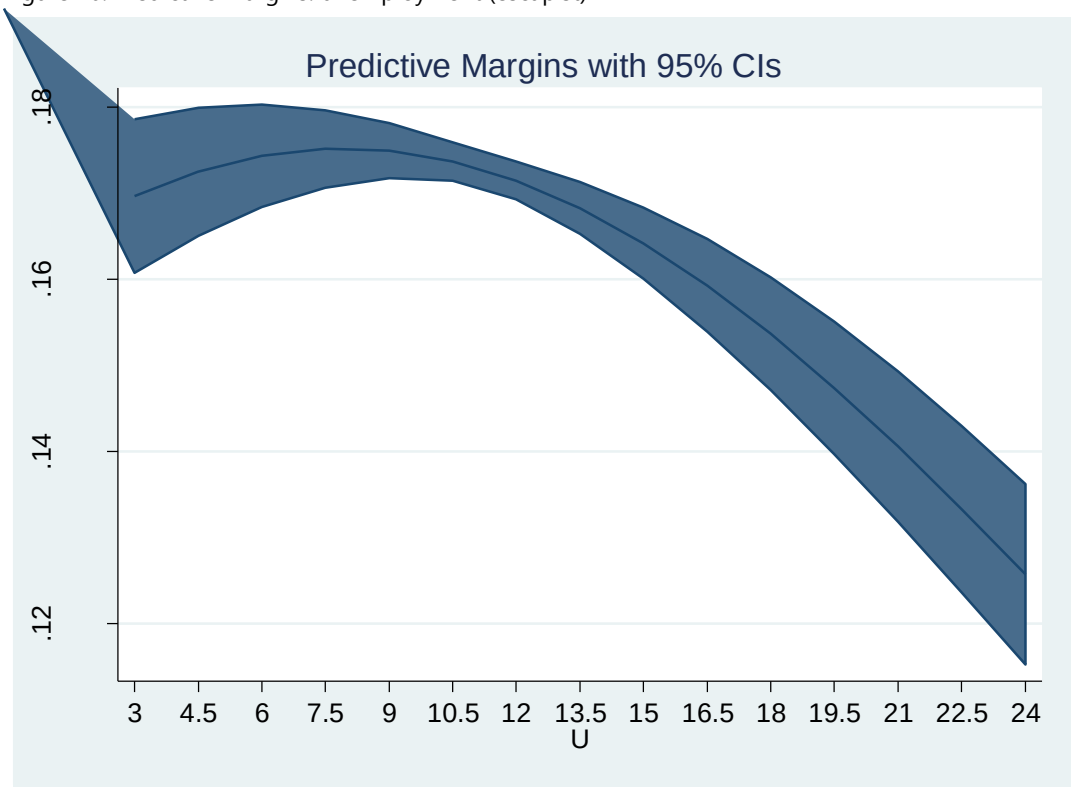



Figure 11. Predictive margins: unemployment (nationalist)

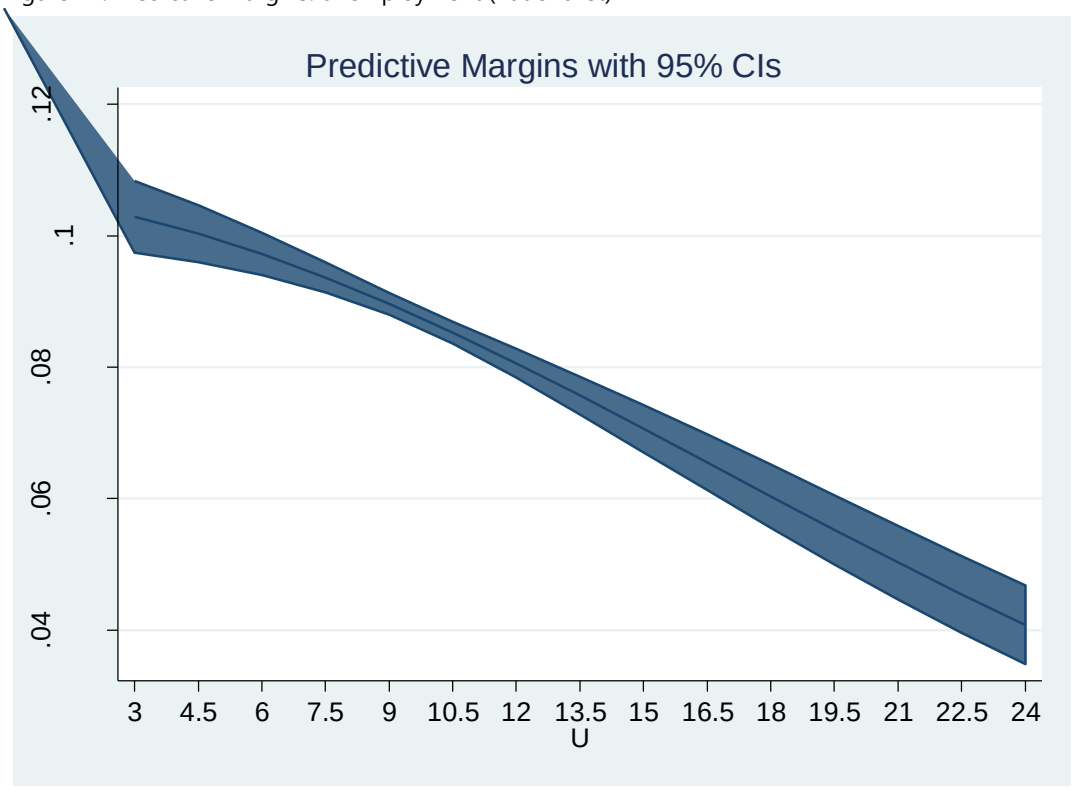


Figure 12. Predictive margins: average euro zone unemployment (escapist)

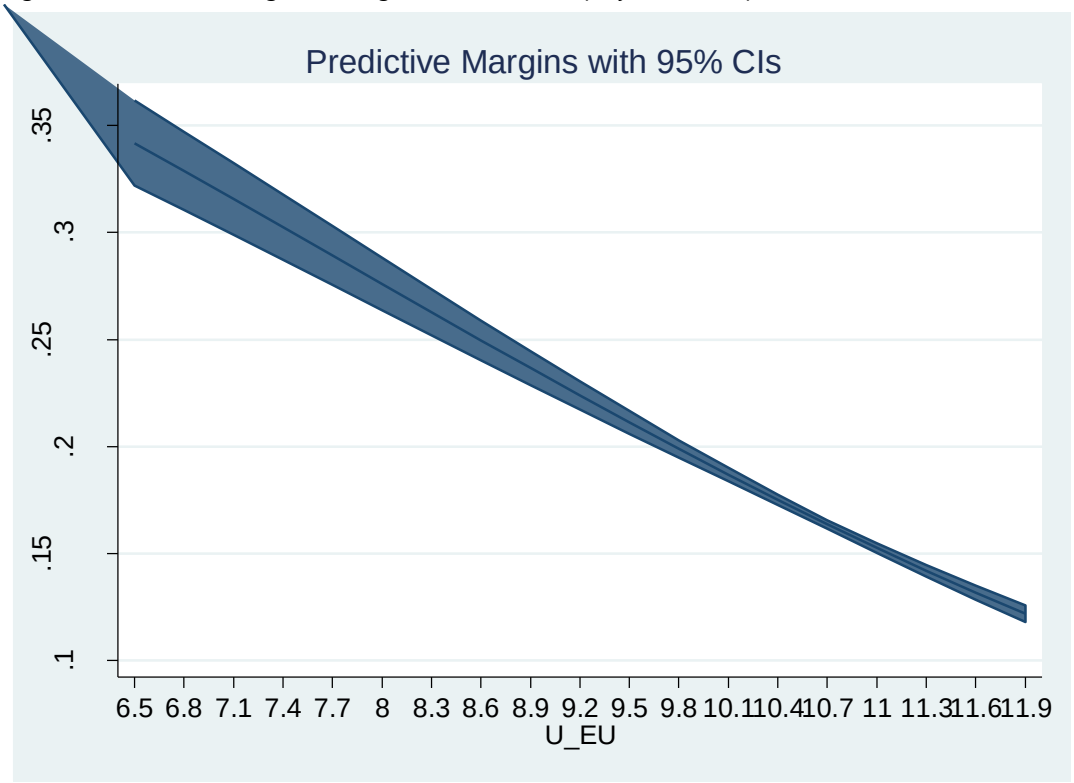



Figure 13. Predictive margins: average euro zone unemployment (nationalist)

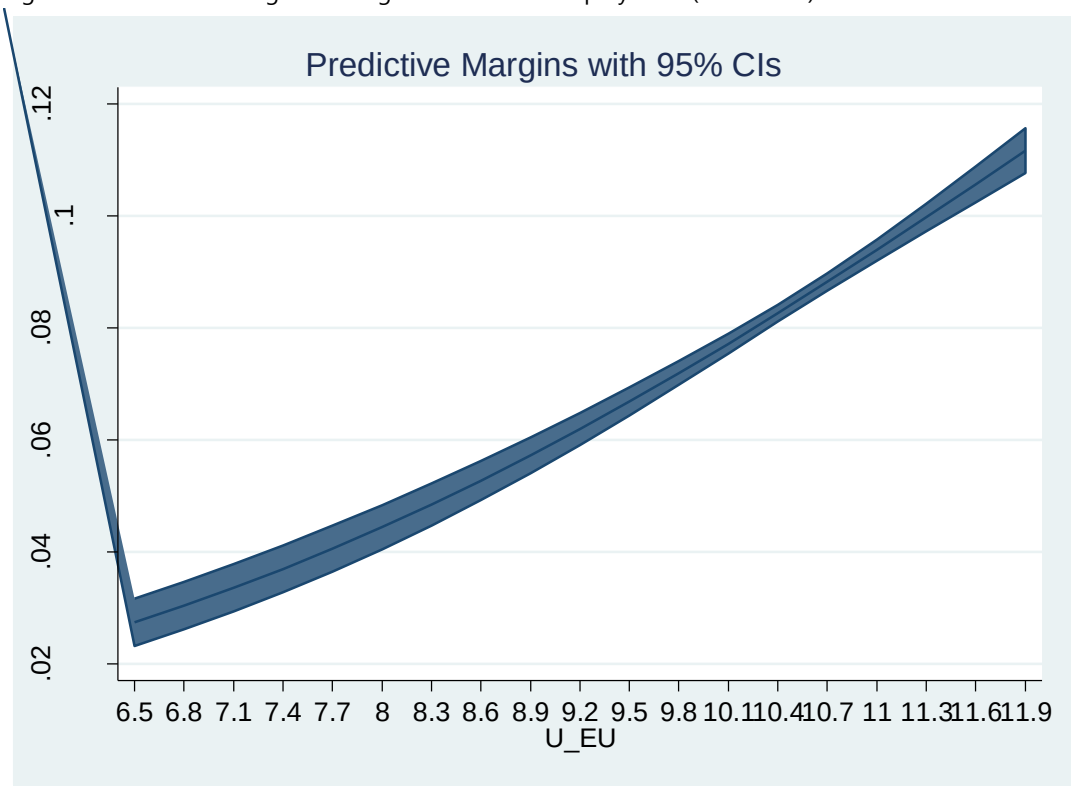


Figure 14. Predictive margins: gap between national and euro zone average unemployment (escapist)

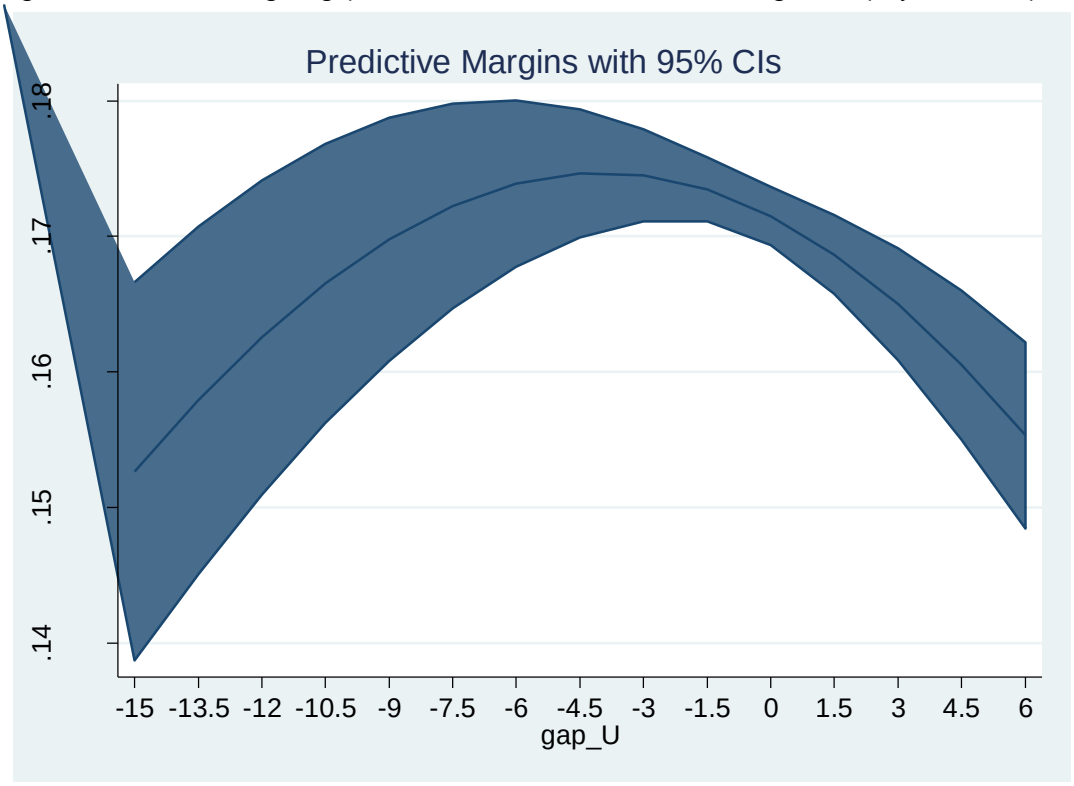
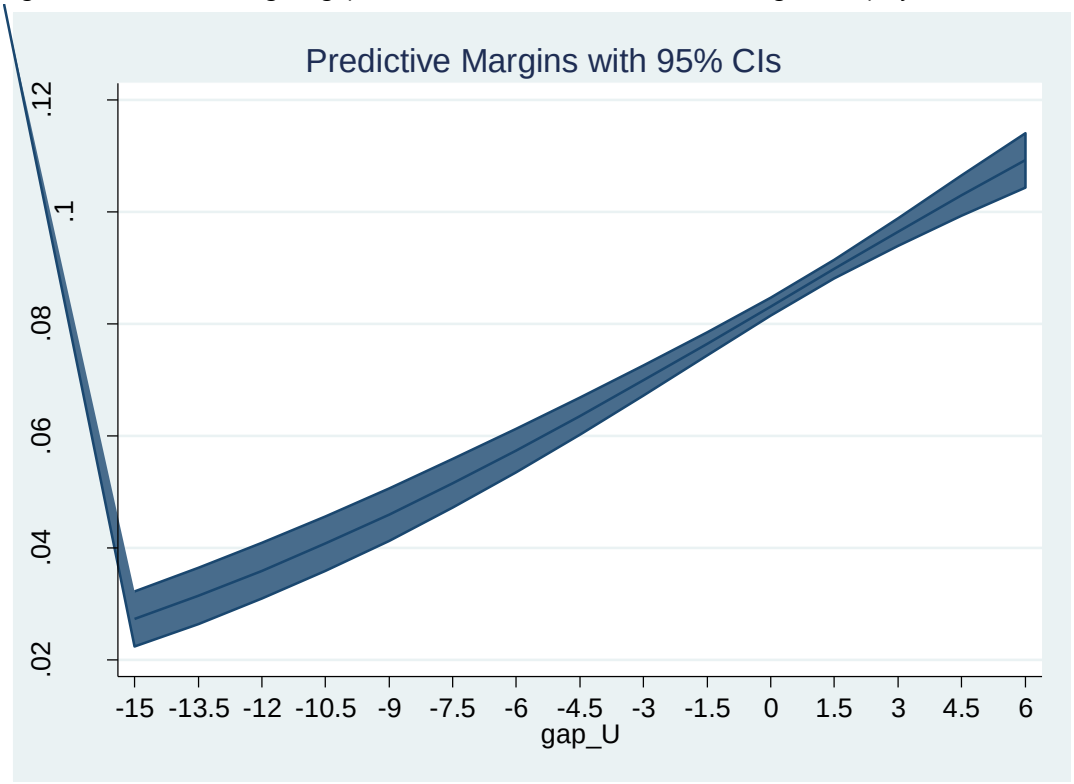



Figure 15. Predictive margins: gap between national and euro zone average unemployment (nationalist)



## ROBUSTNESS CHECKS

Alternative specifications are presented in the appendix to make sure the previous results are robust. First of all, we include survey dummies to control for any factors common to one survey that might bias the coefficients (for example, a major event related to the EU that might have taken place around the date of the interviews). Such model no longer exploits the variation over time, but only the variation of responses within the same survey. Column 1 is the baseline model, column 2 includes the macroeconomic variable and column 3 focuses on the post-crisis period (2010-2014). This specification indeed has an impact on the significance of the macroeconomic variables. Long term interest rates in the post-crisis period no longer impact on trust in the EU. Coefficients for unemployment rates remain unaltered. This is not surprising because in the previous sections coefficients for long term interest rates were quite volatile. Additionally fixed effects reduce the variation that can be exploited, consequently significance is harder to achieve.

Subsequently, trust in national government is included as an explanatory variable. The inclusion of the variable does not challenge our results. However when the period considered is 2007-2011 as in Armingeon and Ceka (2014), the significance of the unemployment rate is highly reduced which might explain the fact that unemployment rate is not significant in their study. Indeed, when survey dummies are included (as in the case of their study), the coefficient for unemployment rate is no longer significant.

Finally, ordinary least square regressions are estimated for the baseline model, and seemingly unrelated equations are carried out. The estimation procedure does not alter the sign and significance of all the previously mentioned results.

## CONCLUSION

The empirical evidence provided in the paper suggests that the interconnection between the economies of the Euro zone became tangible. And as economic policies go beyond national institutions, citizens blame the EU institutions for the poor macroeconomic performances in the area. The first part of the empirical analysis enhances the ambiguous role played by long term interest rates, changing sign from one period to another. Before the crisis, high interest rates countries are those who benefited the most from the adoption of the single currency and during the crisis several countries with high interest rates have received bailouts. However they did not recover[13] and as their economic performances move away from other countries in the EU, solidarity becomes less likely which might explain the interest rates are associated with lower trust in the post-crisis period. As a second step we document the idea that support for the EU is derived from evaluations of national politics and policy. We hypothesize that a considerable proportion of EU citizens are now able to make an informed opinion on EU politics. Bivariate probit estimates show that macroeconomic conditions might have a different impact on trust in the European Union compared to trust in national governments. Predictive margins derived from the bivariate probit model suggest that citizens living in countries with economic performances close to the Euro zone average are more likely to trust the European Union. This again underscores the political challenges an increasingly heterogeneous European Union poses.

[13] Except for Ireland

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## APPENDIX

Macro variables, source EUROSTAT

**Long-term interest rates**
EMU convergence criterion bond yields (10yr government bonds)

**Unemployment rate**
Unemployed persons are persons aged 15-74 who were without work during the reference week, but who are currently available for work and were either actively seeking work in the past four weeks or had already found a job to start within the next three months.

Micro variables, source Eurobarometer

Eurobarometers (EB) Included in the Analysis:

| Code | Date | | |
|---|---|---|---|
| EB 62.0 | November 2004 | EB 74.2 | Nov-Dec 2010 |
| EB 63.4 | May-June 2005 | EB 75.3 | May 2011 |
| EB 66.1 | October 2006 | EB 76.3 | November 2011 |
| EB 67.2 | April-May 2007 | EB 77.3 | May 2012 |
| EB 68.1 | Sept–Oct 2007 | EB 78.1 | November 2012 |
| EB 69.2 | March–May 2008 | EB 79.3 | 2013 |
| EB 70.1 | Oct–Nov 2008 | EB 80.1 | November 2013 |
| EB 71.3 | June–July 2009 | EB 81.2 | March 2014 |
| EB 72.4 | Oct–Nov 2009 | EB 82.3 | November 2014 |
| EB 73.4 | May 2010 | | |

Likelihood functions

The likelihood function for logit is:

$$lnL = \sum_{j \in S} lnF\left(x_j b\right) + \sum_{j \notin S} ln\left\{1 - F(x_j b)\right\}$$

S stands for all the observations $j$, such that $y_j \neq 0$ and $F(z) = e^z/(1 + e^z)$.

The likelihood-ratio chi2 test is defined as $2(L_1 - L_0)$ where $L_1$is the log likelihood of the full model, and $L_0$the log likelihood of the model including only the constant term.

The pseudo R-square (McFadden 1974) is defined as $1 - L_1/L_0$

For bivariate probit regression, the log likelihood, is given by

$$\xi_j^{\beta} = x_j\beta + offset_j^{\beta}$$

$$\xi_j^{\gamma} = x_j\gamma + offset_j^{\gamma}$$

$$q_{1j} = \begin{cases} 1\ if\ y_{1j} \neq 0 \\ -1\ otherwise \end{cases}$$

$$q_{2j} = \begin{cases} 1\ if\ y_{2j} \neq 0 \\ -1\ otherwise \end{cases}$$

$$\rho_j^* = q_{1j}q_{2j}\rho$$

$$lnL = \sum_{j=1}^{n} ln\Phi_2\left(q_{1j}\xi_j^{\beta}, q_{2j}\xi_j^{\gamma}, \rho_j^*\right)$$

$\Phi_2$ is the cumulative bivariate normal distribution

In the maximum likelihood estimation of bivariate probit models atanh $\rho$ is estimated. From the likelihood function, if $\rho = 0$ then the log likelihood is equal to the sum of the log likelihood of the two univariate probit models. A likelihood-ratio test can thus be performed.

$$\text{atanh}\ \ \rho = \frac{1}{2} ln\ \frac{(1+\rho)}{(1-\rho)}$$

Summary statistics

| | Frequency | Percentage | Total |
|---|---|---|---|
| *Survey number* | | | |
| 620 | 27,928 | 10.36 | 269465 |
| 661 | 14,107 | 5.24 | 269465 |
| 672 | 14,142 | 5.25 | 269465 |
| 681 | 14,183 | 5.26 | 269465 |
| 692 | 14,19 | 5.27 | 269465 |
| 701 | 14,173 | 5.26 | 269465 |
| 713 | 14,17 | 5.26 | 269465 |
| 724 | 14,192 | 5.27 | 269465 |
| 734 | 14,157 | 5.25 | 269465 |
| 742 | 14,259 | 5.29 | 269465 |
| 753 | 14,246 | 5.29 | 269465 |
| 763 | 14,176 | 5.26 | 269465 |
| 773 | 14,179 | 5.26 | 269465 |
| 781 | 14,19 | 5.27 | 269465 |
| 793 | 14,111 | 5.24 | 269465 |
| 801 | 14,346 | 5.32 | 269465 |
| 812 | 14,403 | 5.35 | 269465 |
| 823 | 14,313 | 5.31 | 269465 |
| | | | |
| *Occupation* | | | |
| Self employed | 21587 | 8.01 | 269465 |
| managers | 25170 | 9.34 | 269465 |
| other white colla | 28905 | 10.73 | 269465 |
| manual workers | 51970 | 19.29 | 269465 |
| House person | 27342 | 10.15 | 269465 |
| Unemployed | 21111 | 7.83 | 269465 |
| Retired | 72326 | 26.84 | 269465 |
| Student | 21054 | 7.81 | 269465 |
| | | | |
| *Age categories* | | | |
| 15-24 | 30605 | 11.36 | 269465 |
| 25-39 | 62967 | 23.37 | 269465 |
| 40-54 | 70392 | 26.12 | 269465 |
| Above 55 | 105501 | 39.15 | 269465 |
| | | | |
| *Gender* | | | |
| Male | 123986 | 46.01 | 269465 |
| Female | 145479 | 53.99 | 269465 |

| | Frequency | Percentage | Total |
|---|---|---|---|
| *Trust in the EU* | | | |
| tend not to trust | 123861 | 45.97 | 269465 |
| tend to trust | 119595 | 44.38 | 269465 |
| don't know | 26009 | 9.65 | 269465 |
| | | | |
| *Trust in the EU (binary)* | | | |
| Tend not to trust | 123,861 | 50.88 | 243456 |
| Tend to trust | 119,595 | 49.12 | 243456 |
| | | | |
| *Trust in national government* | | | |
| Tend to trust | 97,605 | 37.54 | 259983 |
| Tend not to trust | 157,777 | 60.69 | 259983 |
| don't know | 4,601 | 1.77 | 259983 |
| | | | |
| *Trust in national government (binary)* | | | |
| tend not to trust | 167,259 | 63.15 | 264864 |
| tend to trust | 97,605 | 36.85 | 264864 |
| | | | |
| *Country* | | | |
| Austria | 19143 | 7.10 | 269465 |
| Belgium | 19241 | 7.14 | 269465 |
| Cyprus | 9560 | 3.55 | 269465 |
| Finland | 19153 | 7.11 | 269465 |
| France | 19471 | 7.23 | 269465 |
| Germany | 29242 | 10.85 | 269465 |
| Greece | 19012 | 7.06 | 269465 |
| Ireland | 19077 | 7.08 | 269465 |
| Italy | 19441 | 7.21 | 269465 |
| Luxembourg | 9597 | 3.56 | 269465 |
| Malta | 9502 | 3.53 | 269465 |
| Netherlands | 19292 | 7.16 | 269465 |
| Portugal | 19120 | 7.10 | 269465 |
| Slovenia | 19439 | 7.21 | 269465 |
| Spain | 19175 | 7.12 | 269465 |
| | | | |
| *Year* | | | |
| 2004 | 13773 | 5.23 | 269465 |
| 2005 | 14155 | 5.25 | 269465 |
| 2006 | 14107 | 5.23 | 269465 |
| 2007 | 28325 | 10.50 | 269465 |
| 2008 | 28363 | 10.51 | 269465 |
| 2009 | 28362 | 10.51 | 269465 |
| 2010 | 28416 | 10.53 | 269465 |
| 2011 | 28422 | 10.53 | 269465 |
| 2012 | 28369 | 10.51 | 269465 |
| 2013 | 28457 | 10.55 | 269465 |
| 2014 | 28716 | 10.64 | 269465 |

| | Obs | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|
| | | | | | |
| *U* | 269465 | 9.105307 | 4.902011 | 3.7 | 27.5 |
| | | | | | |
| *Ustd* | 269465 | 1.89e-09 | 1 | -1.102671 | 3.752479 |
| | | | | | |
| *LTr* | 269465 | 4.245855 | 2.502474 | 1.16 | 22.5 |
| | | | | | |
| *LTrstd* | 269465 | 2.27e-10 | 1 | -1.233121 | 7.294439 |
| | | | | | |
| *U_EU* | 269465 | 9.105307 | 1.874386 | 6.592958 | 11.89887 |
| | | | | | |
| *gap_U* | 269465 | -8.48e-09 | 4.529502 | -15.63197 | 6.698866 |

Descriptive statistics

| Country | tend not to trust | tend to trust | Total |
|---|---|---|---|
| Austria | 55.56 | 44.44 | 100.00 |
| Belgium | 42.05 | 57.95 | 100.00 |
| Cyprus | 50.22 | 49.78 | 100.00 |
| Finland | 50.76 | 49.24 | 100.00 |
| France | 56.56 | 43.44 | 100.00 |
| Germany | 58.71 | 41.29 | 100.00 |
| Greece | 57.41 | 42.59 | 100.00 |
| Ireland | 48.06 | 51.94 | 100.00 |
| Italy | 52.27 | 47.73 | 100.00 |
| Luxembourg | 43.79 | 56.21 | 100.00 |
| Malta | 35.26 | 64.74 | 100.00 |
| The Netherlands | 47.31 | 52.69 | 100.00 |
| Portugal | 49.32 | 50.68 | 100.00 |
| Slovenia | 46.97 | 53.03 | 100.00 |
| Spain | 52.74 | 47.26 | 100.00 |
| Total | 50.88 | 49.12 | 100.00 |

| Occupation | tend not to trust | tend to trust | Total |
|---|---|---|---|
| Self employed | 49.17 | 50.83 | 100.00 |
| managers | 42.18 | 57.82 | 100.00 |
| other white collars | 48.86 | 51.14 | 100.00 |
| manual workers | 54.68 | 45.32 | 100.00 |
| House person | 51.84 | 48.16 | 100.00 |
| Unemployed | 63.76 | 36.24 | 100.00 |
| Retired | 52.79 | 47.21 | 100.00 |
| Student | 36.17 | 63.83 | 100.00 |
| Total | 50.88 | 49.12 | 100.00 |

| Trust in national government | Tend not to trust | Tend to trust | Total |
|---|---|---|---|
| | | | |
| Tend not to trust | 102822 | 46850 | 149672 |
| | 68.70 % | 31.30 % | |
| Tend to trust | 19726 | 71588 | 91314 |
| | 21.60 % | 78.40 % | |
| Total | 122548 | 118438 | 240986 |

ROBUSTNESS CHECKS

| | [1] | [2] | [3] |
|---|---|---|---|
| *ref cat: male* | | | |
| female | 0.940*** | 0.938*** | 0.928*** |
| | (-6.92) | (-7.15) | (-6.16) |
| | | | |
| *ref cat: 25-39* | | | |
| 15-24 | 1.198*** | 1.198*** | 1.226*** |
| | (9.08) | (9.01) | (7.29) |
| 40-54 | 0.876*** | 0.880*** | 0.887*** |
| | (-10.97) | (-10.60) | (-7.12) |
| Above 55 | 0.964* | 0.953*** | 0.940** |
| | (-2.54) | (-3.31) | (-3.13) |
| | | | |
| *ref cat: Other white collar* | | | |
| Self-employed | 1.043* | 1.047* | 1.066* |
| | (2.15) | (2.33) | (2.37) |
| Manager | 1.355*** | 1.355*** | 1.384*** |
| | (16.14) | (16.10) | (12.56) |
| Manual worker | 0.770*** | 0.770*** | 0.763*** |
| | (-16.30) | (-16.23) | (-12.08) |
| House person | 0.812*** | 0.806*** | 0.778*** |
| | (-10.53) | (-10.84) | (-8.73) |
| Unemployed | 0.583*** | 0.614*** | 0.615*** |
| | (-26.67) | (-23.92) | (-17.99) |
| Retired | 0.866*** | 0.875*** | 0.886*** |
| | (-7.83) | (-7.20) | (-4.79) |
| Student | 1.391*** | 1.398*** | 1.353*** |
| | (13.04) | (13.19) | (8.69) |
| | | | |
| Standardized values of long term interest rate | | 0.939*** | 1.011 |
| | | (-7.59) | (1.00) |
| | | | |
| Standardized values of unemployment rate | | 0.728*** | 0.705*** |
| | | (-31.12) | (-18.97) |
| | | | |
| | | | |
| Observations | 243456 | 243456 | 130040 |
| pseudo R-sq | 0.055 | 0.061 | 0.046 |
| Log likelihood | -159513.2 | -158410.3 | -83651.9 |
| chi2 | 18400.4 | 20606.3 | 8122.0 |
| Country dummies | Yes | Yes | Yes |
| Survey dummies | Yes | Yes | Yes |

| | [1] | [2] | [3] | [4] | [5] |
|---|---|---|---|---|---|
| Trust in national governme | 9.447*** | 9.113*** | 9.626*** | 9.327*** | 9.383*** |
| | (205.14) | (201.32) | (147.09) | (146.52) | (146.26) |
| | | | | | |
| *ref cat: male* | | | | | |
| female | 0.967*** | 0.965*** | 0.949*** | 0.947*** | 0.948*** |
| | (-3.35) | (-3.60) | (-3.81) | (-3.99) | (-3.92) |
| | | | | | |
| *ref cat: 25-39* | | | | | |
| 15-24 | 1.205*** | 1.202*** | 1.204*** | 1.169*** | 1.167*** |
| | (8.47) | (8.34) | (5.95) | (5.23) | (5.15) |
| 40-54 | 0.860*** | 0.863*** | 0.873*** | 0.880*** | 0.879*** |
| | (-11.22) | (-10.95) | (-7.16) | (-6.98) | (-7.01) |
| Above 55 | 0.866*** | 0.860*** | 0.869*** | 0.858*** | 0.858*** |
| | (-8.88) | (-9.31) | (-6.22) | (-6.92) | (-6.90) |
| | | | | | |
| *ref cat: Other white collar* | | | | | |
| Self-employed | 1.054* | 1.058* | 1.070* | 1.020 | 1.019 |
| | (2.39) | (2.54) | (2.22) | (0.65) | (0.63) |
| Manager | 1.291*** | 1.292*** | 1.314*** | 1.314*** | 1.319*** |
| | (12.10) | (12.13) | (9.29) | (9.38) | (9.52) |
| Manual worker | 0.812*** | 0.811*** | 0.815*** | 0.775*** | 0.776*** |
| | (-11.64) | (-11.66) | (-8.07) | (-10.48) | (-10.40) |
| House person | 0.786*** | 0.783*** | 0.770*** | 0.741*** | 0.742*** |
| | (-10.86) | (-11.02) | (-8.04) | (-9.96) | (-9.92) |
| Unemployed | 0.675*** | 0.705*** | 0.711*** | 0.648*** | 0.647*** |
| | (-17.51) | (-15.49) | (-11.33) | (-13.79) | (-13.83) |
| Retired | 0.855*** | 0.863*** | 0.876*** | 0.837*** | 0.838*** |
| | (-7.54) | (-7.11) | (-4.63) | (-6.28) | (-6.22) |
| Student | 1.374*** | 1.381*** | 1.366*** | 1.395*** | 1.406*** |
| | (11.36) | (11.48) | (7.99) | (8.65) | (8.84) |
| | | | | | |
| survey | 0.994*** | 0.996*** | 0.994*** | 0.993*** | |
| | (-68.78) | (-43.63) | (-20.13) | (-26.51) | |
| | | | | | |
| Standardized values of long term interest rate | | 0.960*** | 0.925*** | 0.830*** | 0.882*** |
| | | (-5.64) | (-7.57) | (-13.61) | (-8.05) |
| | | | | | |
| Standardized values of unemployment rate | | 0.781*** | 0.780*** | 1.044* | 0.972 |
| | | (-25.37) | (-12.85) | (1.97) | (-1.15) |
| | | | | | |
| Observations | 240986 | 240986 | 127570 | 127400 | 127400 |
| Survey dummies | No | No | No | No | Yes |
| Country dummies | Yes | Yes | Yes | Yes | Yes |

ORDINARY LEAST SQUARE

| | [1] | [2] |
|---|---|---|
| *ref cat: male* | | |
| female | 0.986*** | 0.983*** |
| | (-7.02) | (-6.09) |
| | | |
| *ref cat: 25-39* | | |
| 15-24 | 1.042*** | 1.045*** |
| | (8.86) | (6.92) |
| 40-54 | 0.972*** | 0.974*** |
| | (-10.28) | (-6.92) |
| Above 55 | 0.989** | 0.987** |
| | (-3.20) | (-2.94) |
| | | |
| Standardized values of long term interest rate | 0.992*** | 0.987*** |
| | (-5.80) | (-6.70) |
| | | |
| Standardized values of unemployment rate | 0.915*** | 0.927*** |
| | (-46.75) | (-20.19) |
| | | |
| *ref cat: Other white collar* | | |
| Self-employed | 1.009* | 1.013* |
| | (2.02) | (2.15) |
| Manager | 1.074*** | 1.083*** |
| | (16.42) | (13.21) |
| Manual worker | 0.941*** | 0.940*** |
| | (-16.17) | (-12.07) |
| House person | 0.951*** | 0.945*** |
| | (-10.94) | (-8.80) |
| Unemployed | 0.896*** | 0.901*** |
| | (-23.76) | (-17.53) |
| Retired | 0.970*** | 0.974*** |
| | (-7.09) | (-4.62) |
| Student | 1.078*** | 1.078*** |
| | (12.94) | (9.36) |
| | | |
| survey | 0.999*** | 0.999*** |
| | (-49.15) | (-17.75) |
| | | |
| Observations | 243456 | 130040 |
| Country dummy | Yes | Yes |

SEEMINGLY UNRELATED REGRESSION

| | [1] | | [2] | |
|---|---|---|---|---|
| | Trust national | EU trust | Trust national | EU trust |
| *ref cat: male* | | | | |
| female | 0.984*** | 0.983*** | 0.984*** | 0.983*** |
| | (-6.20) | (-6.20) | (-6.30) | (-6.28) |
| | | | | |
| *ref cat: 25-39* | | | | |
| 15-24 | 1.016** | 1.043*** | 1.017** | 1.043*** |
| | (2.71) | (6.46) | (2.81) | (6.56) |
| 40-54 | 0.995 | 0.973*** | 0.996 | 0.974*** |
| | (-1.44) | (-7.09) | (-1.21) | (-6.90) |
| Above 55 | 1.026*** | 0.988** | 1.026*** | 0.988** |
| | (6.13) | (-2.74) | (6.21) | (-2.72) |
| | | | | |
| *ref cat: Other white collar* | | | | |
| Self-employed | 1.003 | 1.014* | 1.002 | 1.013* |
| | (0.52) | (2.23) | (0.38) | (2.11) |
| Manager | 1.057*** | 1.082*** | 1.057*** | 1.082*** |
| | (9.85) | (12.98) | (9.88) | (13.02) |
| Manual worker | 0.950*** | 0.939*** | 0.951*** | 0.939*** |
| | (-10.77) | (-12.23) | (-10.67) | (-12.10) |
| House person | 0.978*** | 0.943*** | 0.979*** | 0.944*** |
| | (-3.64) | (-8.98) | (-3.48) | (-8.79) |
| Unemployed | 0.912*** | 0.897*** | 0.915*** | 0.901*** |
| | (-16.78) | (-18.14) | (-16.15) | (-17.38) |
| Retired | 0.994 | 0.972*** | 0.994 | 0.973*** |
| | (-1.20) | (-4.94) | (-1.06) | (-4.74) |
| Student | 1.026*** | 1.077*** | 1.026*** | 1.077*** |
| | (3.41) | (9.11) | (3.41) | (9.13) |
| | | | | |
| survey | 1.000*** | 0.999*** | 1.000 | 0.999*** |
| | (-9.42) | (-31.13) | (1.59) | (-18.22) |
| | | | | |
| Long term interest rates | | | 1.001 | 0.995*** |
| | | | (1.17) | (-6.98) |
| | | | | |
| Domestic unemployment rate | | | 0.986*** | 0.985*** |
| | | | (-19.95) | (-20.12) |
| | | | | |
| Country fixed effects | Yes | Yes | Yes | Yes |
| Observations | 127570 | 127570 | 127570 | 127570 |
| Log likelihood | -148029.5 | -148029.5 | -147667.8 | -147667.8 |
| chi2 | 17416.9 | 17416.9 | 17892.2 | 17892.2 |

| | [3] | | [4] | |
|---|---|---|---|---|
| | Trust national | EU trust | Trust national | EU trust |
| *ref cat: male* | | | | |
| female | 0.984*** | 0.983*** | 0.984*** | 0.983*** |
| | (-6.19) | (-6.25) | (-6.29) | (-6.24) |
| | | | | |
| *ref cat: 25-39* | | | | |
| 15-24 | 1.016** | 1.044*** | 1.017** | 1.043*** |
| | (2.73) | (6.63) | (2.77) | (6.51) |
| 40-54 | 0.995 | 0.973*** | 0.996 | 0.974*** |
| | (-1.46) | (-7.19) | (-1.20) | (-6.95) |
| Above 55 | 1.026*** | 0.987** | 1.026*** | 0.988** |
| | (6.09) | (-2.92) | (6.24) | (-2.73) |
| | | | | |
| *ref cat: Other white collar* | | | | |
| Self-employed | 1.003 | 1.015* | 1.002 | 1.013* |
| | (0.53) | (2.38) | (0.35) | (2.12) |
| Manager | 1.057*** | 1.082*** | 1.057*** | 1.082*** |
| | (9.85) | (12.99) | (9.89) | (13.02) |
| Manual worker | 0.950*** | 0.939*** | 0.950*** | 0.939*** |
| | (-10.74) | (-12.11) | (-10.69) | (-12.13) |
| House person | 0.979*** | 0.944*** | 0.979*** | 0.944*** |
| | (-3.61) | (-8.83) | (-3.51) | (-8.84) |
| Unemployed | 0.912*** | 0.898*** | 0.915*** | 0.900*** |
| | (-16.69) | (-17.85) | (-16.16) | (-17.52) |
| Retired | 0.994 | 0.972*** | 0.994 | 0.973*** |
| | (-1.17) | (-4.92) | (-1.04) | (-4.74) |
| Student | 1.026*** | 1.076*** | 1.026*** | 1.077*** |
| | (3.40) | (9.07) | (3.43) | (9.13) |
| | | | | |
| survey | 1.000** | 1.000*** | 1.000*** | 0.998*** |
| | (-2.93) | (3.45) | (-8.21) | (-31.95) |
| | | | | |
| Long term interest rates | 0.997*** | 0.993*** | 1.000 | 0.993*** |
| | (-4.12) | (-9.53) | (0.48) | (-8.95) |
| | | | | |
| Euro zone unemployment rate | 0.995* | 0.940*** | | |
| | (-1.98) | (-20.96) | | |
| | | | | |
| Distance from Eurozone mean unemployment | | | 1.014*** | 1.012*** |
| | | | (19.91) | (15.07) |
| | | | | |
| | | | | |
| Country fixed effects | Yes | Yes | Yes | Yes |
| Observations | 127570 | 127570 | 127570 | 127570 |
| Log likelihood | -147689.2 | -147689.2 | -147722.8 | -147722.8 |
| chi2 | 17444.2 | 17444.2 | 17890.5 | 17890.5 |